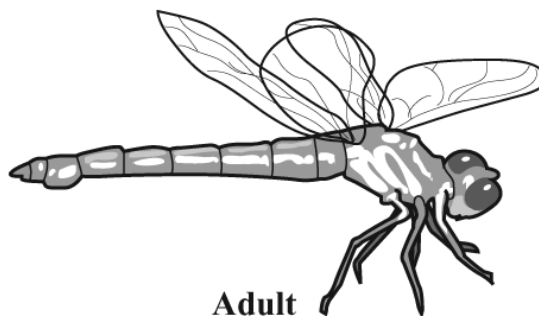




**Science Grade 5
Scoring Guide for
Released Item #20
Hines Emerald Dragonflies
Fall 2005**



Prompt

**Larva****Adult**

The Hines Emerald Dragonfly can be found in Michigan and was one of the first insect species to be listed as endangered under the Endangered Species Act. Female dragonflies deposit eggs in shallow water, near plants or in soft mud. After the larvae hatch, they live underwater for two to four years. In this time, they shed their exoskeletons eight to fifteen times. The larvae have large lower lips with bristles that can be extended up to one-third of their body length. They consume large quantities of mosquito larvae, water insects, worms, and even small fishes and tadpoles. Once larval growth is complete, they emerge from the water to begin a life in the air. They shed their final exoskeleton to reveal a bright green body, and their wings expand. These dragonflies have large eyes that are capable of seeing nearly 360 degrees (in all directions) and can detect even the slightest movement. They have two sets of wings that work independently of each other, allowing the dragonflies to fly forward, backward, change directions in mid-air, and hover motionless. They feed on mosquitoes, flies, and other insects for four to seven weeks before returning to the water to mate and die.

ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER FOLDER.**Constructed-Response
(3 points)**

Michigan is one of the few states where the endangered Hines Emerald Dragonflies live.

- Identify three actions that could be taken by Michigan government and citizens to maintain the population of the Hines Emerald Dragonflies in Michigan.

NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.

Science Rubric for the Hines Emerald Dragonflies

Acceptable Responses:

- Avoid destruction of wetlands (e.g., construction in or draining of).
- Avoid destruction of plants in the habitat.
- Establish protected areas (to avoid human contact).
- Create artificial (man-made) habitat.
- Wetlands restoration in areas where damage has occurred (e.g., replacing water, plants) or establishment of new breeding areas.
- Monitor pollution levels in breeding areas (e.g., lakes, ponds, swamps).
- Don't kill, capture, collect or remove from the environment.
- Husbandry (e.g., breeding or cloning, importing, re-locating)
- Predator control
- Promote abundance/limit destruction of food supply (e.g., limit pest control, feed dragonflies).
- Public education/citizen lobbying
- Enact new laws protecting the dragonfly or its habitat.
- Any other logical step at the government and citizen level.

Scoring Guide:

- 3 points** The student identifies three steps that could be taken at the government/citizen level to help maintain the current dragonfly population.
- 2 points** The student identifies two steps that could be taken at the government/citizen level to help maintain the current dragonfly population.
- 1 point** The student identifies one step that could be taken at the government/citizen level to help maintain the current dragonfly population.
- 0 points** The student fails to correctly identify any steps that could be taken at the government/citizen level to help maintain the current dragonfly population.

Condition codes for unratable papers (zeroes):

A – Off Topic

B – Written in a Language other than English or Illegible

C – Blank or Refusal to Respond

Anchor Paper 1 – Score Point 3

A 1

(3)

3 points

Since Michigan is one of the few states where endangered Hines Emerald Dragonflies live, three actions that we could do to maintain the population of the Emerald Dragonflies are one we should stop draining out lakes and rivers. If we did this the female Dragonflies could reproduce more young. Another way we could help is to not pollute rivers, streams, and lakes. If we stopped polluting more dragonfly eggs could have the chance to hatch. Also in the summer to not swat as many insects, the dragonflies eat insects.

Anchor Paper 1
Score Point 3

The student identifies three steps that could be taken at the government/citizen level to help maintain the current dragonfly population: avoiding destruction of wetlands (*we should stop draining out lakes and rivers*), monitoring pollution levels in breeding areas (*not pollute rivers, streams, and lakes*), and limiting destruction of food supply (*not swat as many insects, the dragonflies eat insects*).

Anchor Paper 2 – Score Point 3

A 2

(3)

3 points

In Michigan many wetlands are being drained. The larva need water to live so we could stop draining wetlands. An organization could also be put together that captures a few dragonflies and breeds them to make more. Many people are polluting the wetlands that the larva live in. This causes the larva to die because they can't get clean water.

Anchor Paper 2
Score Point 3

The student identifies three steps that could be taken at the government/citizen level to help maintain the current dragonfly population. Avoiding the destruction of wetlands (*we could stop draining wetlands*) and husbandry through breeding (*An organization...that captures a few dragonflies and breeds them to make more*) are the first two ideas. The student goes on to mention another problem (*people are polluting the wetlands that the larva live in*) and ties it to falling population (*This causes the larva to die*). This conveys the idea that another step that could be taken is to monitor pollution levels in breeding areas.

Anchor Paper 3 – Score Point 3

A 3

③

3 points

The government could stop making land which is there habitat into homes. We could stop killing bugs like mosquitos because if those are gone then the Green Emerald Dragonfly cant eat them and will die. We can stop killing plants they lay their eggs in.

Anchor Paper 3
Score Point 3

The student identifies three steps that could be taken at the government/citizen level to help maintain the current dragonfly population: avoiding construction in wetlands (*The government could stop making land which is there habitat into homes*), limiting the destruction of food supply (*We could stop killing bugs like mosquitos*) and avoiding destruction of plants in the habitat (*We can stop killing plants they lay their eggs in*).

Anchor Paper 4 – Score Point 3

A 4

(3)

3 points

1. We could stop landscaping in wet area's. 2. We could help make more wet places. 3. We could set aside a big wet place.

Anchor Paper 4
Score Point 3

The student identifies three steps that could be taken at the government/citizen level to help maintain the current dragonfly population: avoiding construction in the wetlands (*We could stop landscaping in wet area's*), establishing new breeding areas (*We could...make more wet places*) and establishing protected areas (*We could set aside a big wet place*).

Anchor Paper 5 – Score Point 2

A 5

(2)

3 points

Three actions that could be taken by Michigan citizens and the government are they could make a law that you can't hurt or injure or kill dragon flies. They could also restrict or make an area of which people can't trespass on because it could be the habitat of the dragon flies so no one can bother them. And finally they could study more about them and find a way to also help the dragon flies. Those are my options.

Anchor Paper 5
Score Point 2

The student identifies two steps that could be taken at the government/citizen level to help maintain the current dragonfly population: enacting new laws to protect the dragonfly (*they could make a law that you can't hurt or injure or kill dragonflies*) and establishing protected areas to avoid human contact (*They could ...make an area of which people can't trespass on because it could be the habitat...so no one can bother them*). The student attempts to give another idea (*study more about them*) that is not an acceptable action because the information given in the prompt makes it clear that the dragonflies have already been studied and "*find a way to also help the dragonflies*" does not identify a specific action that would help maintain the dragonfly population.

Anchor Paper 6 – Score Point 2

A 6

(2)

3 points The first Action that could be taken by the michigan government is to try to keep lakes as un-polluted as possible. My second action is to not drain lakes to make factories. My third and final action is to not pollute the air there for allowing the Dragonfly's to have a longer lifespan.

Anchor Paper 6
Score Point 2

The student identifies two steps that could be taken at the government/citizen level to help maintain the current dragonfly population: monitoring pollution levels in breeding areas (*try to keep lakes as un-polluted as possible*) and avoiding the destruction of wetlands by draining and construction (*to not drain lakes to make factories*). The other step suggested by the student (*to not pollute the air there*) is another example of monitoring pollution levels in breeding areas and so is not considered a separate idea for helping to maintain the dragonfly population.

Anchor Paper 7 – Score Point 2

A 1

(2)

3 points

One idea is not to dig up wetlands.
Another is lower the bird and fish population
and other animals that eat them. The best one
is just leave them alone.

Anchor Paper 7
Score Point 2

The student identifies two steps that could be taken at the government/citizen level to help maintain the current dragonfly population: avoiding destruction of wetlands by construction (*not to dig up wetlands*) and controlling predators (*lower the bird and fish population and other animals that eat them*).

Anchor Paper 8 – Score Point 1

A 8

①

3 points

Three actions are not living in there habitat, not build neighborhoods in there habitat and not destroy swamps where they live.

Anchor Paper 8
Score Point 1

The student identifies one step that could be taken at the government/citizen level to help maintain the current dragonfly population. The suggestions given by the student (*not living in there habitat, not build neighborhoods in there habitat and not destroy swamps where they live*) are all the single idea of avoiding destruction of the wetlands by draining or construction.

Anchor Paper 9 – Score Point 1

A 9

①

3 points

Michigan could protect the Hine
Emerald dragonfly by giving
people a copy of the endangered
species list to every one in
Michigan. We could put its
picture in the paper so people
know not to harm it or we
could send a picture of it
to every one.

**Anchor Paper 9
Score Point 1**

The student identifies one step that could be taken at the government/citizen level to help maintain the current dragonfly population. The suggestions given by the student (*giving people a copy of the endangered species list, put it's picture in the paper so people know not to harm it, send a picture of it to every one*) are all the single idea of public education.

Anchor Paper 10 – Score Point 1

A 10

①

3 points

I believe that the three actions that could be taken by Michigan government and citizens to maintain the population of Emerald Dragonflies in Michigan is. First they can maybe build the dragonflies like some sort of house. Second Michigan can take the dragonflies & take care of them. Third maybe Michigan can give the Emerald dragonflies to the zoo so they can be safe & taken care of.

Anchor Paper 10
Score Point 1

The student identifies one step that could be taken at the government/citizen level to help maintain the current dragonfly population. All the suggestions given by the student (*build the dragonflies...house....take care of them....give...to the zoo so they can be safe & taken care of*) are all the one idea of creating an artificial or made-made habitat.

Anchor Paper 11 – Score Point 0

A 11

Ø

3 points

Make a law that you have to be careful when you are in the water. You could not clear as many lakes or water units. If you do clear any water units be careful.

Anchor Paper 11
Score Point 0

The student fails to correctly identify any steps that could be taken at the government/citizen level to help maintain the current dragonfly population. The suggestion of “a law that you have to be careful when you are in the water” is too vague to be a new law protecting the dragonfly or its habitat. The suggestion to “not clear as many lakes....If you do clear any water units be careful” is too ambiguous to be considered the idea of avoiding the destruction of wetlands by construction or draining. The phrase “be careful” does not explain what care is to be taken.

Anchor Paper 12 – Score Point 0

A12

Ø

3 points

You could get 2 or 3 dragonflies
& get a Scientist to see how they
are disappering. While the dragonflies
are in a jar.

Anchor Paper 12
Score Point 0

The student fails to correctly identify any steps that could be taken at the government/citizen level to help maintain the current dragonfly population. Having dragonflies in a jar so that scientists can “see how they are disappering” does not give an action that could help maintain the population of the dragonfly. Having scientists look at them in a jar will accomplish nothing, and contradicts the idea that the dragonflies should not be captured or killed.